ISTEP+: Grade 3

Mathematics

Parent Guide to ISTEP+ Scoring

Introduction

Indiana students in Grades 3-8 participated in the *ISTEP+* Spring 2014 administration. The test for *ISTEP+* in Spring 2014 consisted of an Applied Skills section administered in March and a Multiple-Choice section administered in late April and early May. For all grades, the Applied Skills section of the assessment was handscored by trained evaluators. The Multiple-Choice section was machine-scored. Scores for the Applied Skills and Multiple-Choice sections are combined to generate a student's total score.

Test results for both the Multiple-Choice and Applied Skills sections, as well as images of the Applied Skills student responses, are available online. It is the expectation of the Indiana Department of Education that schools will take this opportunity to have a conversation with parents and students about the results. As a springboard for this conversation, the Indiana Department of Education has created this document which outlines the released Applied Skills questions and includes brief scoring notes that describe the given score points and explain the scoring rules and expectations for the individual questions.

This document consists of:

- a brief description of the types of questions assessed
- a short summary of scoring rules utilized by the trained evaluators
- access to rubrics used to score student responses
- a copy of the released Applied Skills questions
- anchor papers used by evaluators to distinguish between rubric scores

NOTE: The Applied Skills operational questions are released at the end of each test administration. It is important to keep in mind that a significant portion of a student's score is calculated from the Multiple-Choice section of the assessment, which is not addressed within this document.

QUESTION TYPES

This document addresses the Applied Skills section of *ISTEP+*, which allows students to demonstrate their understanding of content in a variety of ways. The Applied Skills Assessment consists of constructed-response (CR) and extended-response (ER) questions. CR and ER questions are cognitively more demanding than multiple-choice (MC) questions. ER questions are typically more complex and will likely require more steps to respond.

SCORING

For the Applied Skills Assessment, each question is scored according to a rubric. Rubrics clearly define the requirements for each score point. Each student response is evaluated individually to determine whether it is acceptable. This allows student scores to be reported as accurately as possible. To ensure consistency when scoring the *ISTEP+* questions, CTB/McGraw-Hill works closely with assessment specialists at the Indiana Department of Education and teacher committees to set guidelines for scoring student responses. Committees look at several student papers and score them using the rubrics. Some of the student responses are selected as anchor papers and are used as clear examples of specific score points. Samples of anchor papers are presented within this document. Scoring supervisors then use anchor papers and approved, scored student responses to ensure that responses are evaluated appropriately and consistently. Individuals who evaluate and score *ISTEP+* student responses must have a four-year college degree and pass a series of qualifying tests on specific questions before they can evaluate any student responses.

If a response is unscorable, it is assigned one of the following condition codes:

- **A** Blank/No Response/Refusal
- **B** Illegible
- **C** Written predominantly in a language other than English
- **D** Insufficient response/Copied from text

For additional information regarding *ISTEP+* or other student assessments, please contact the Indiana Department of Education by calling 317-232-9050 or writing via email: istep@doe.in.gov.

The chart below summarizes the question types used to measure a student's mastery of content, the assessment that contains the particular question type, the standards assessed in each assessment, and the scoring method used to evaluate a student's response given the question type.

Scoring Note: All student responses to questions found in each Applied Skills Assessment are handscored using the specific rubric(s) outlined in the column labeled "Scoring Method." As indicated in the chart, all multiple-choice questions are machine scored.

Question Type	Assessment	Standards Assessed	Scoring Method
Constructed-Response (CR)	Applied Skills Assessment	1,2,4,5,6	4-pt. CR Rubric (2-pts. Content and 2-pts. Problem Solving)
Extended-Response (ER)	Applied Skills Assessment	1,2,4,5,6	6-pt. ER Rubric (3-pts. Content and 3-pts. Problem Solving)
Multiple-Choice (MC)	Multiple-Choice Assessment	All	Machine-Scored

More information is available regarding these assessment topics on the Office of Student Assessment homepage at http://www.doe.in.gov/assessment.

Constructed-Response Rubric

Content Rubric	
2	A score of two indicates a **thorough understanding** of the mathematical concepts embodied in the task. The response • shows algorithms, computations, and other content related work executed correctly and completely.
1	A score of one indicates a **partial understanding** of the mathematical concepts embodied in the task. The response • contains errors in the execution of algorithms, computations, and/or other content related work.
0	A score of zero indicates **limited or no understanding** of the mathematical concepts embodied in the task.
Problem-Solving Rubric	
2	A score of two indicates a **thorough understanding** of the problem-solving concepts embodied in the task. The response • shows an appropriate strategy to solve the problem, and the strategy is executed correctly and completely. • identifies all important elements of the problem and shows a complete understanding of the relationships among them. • provides clear and complete explanations and/or interpretations when required.
1	A score of one indicates a **partial understanding** of the problem-solving concepts embodied in the task. The response contains one or more of the following errors. The response • shows an appropriate strategy to solve the problem. However, the execution of the strategy contains errors and/or is incomplete. • identifies some of the important elements of the problem and shows a general understanding of the relationships among them. • provides incomplete, partial, or unclear explanations and/or interpretations when required.
0	A score of zero indicates **limited or no understanding** of the problem-solving concepts embodied in the task.

Clarification and Implementation Guidance

- Correct answers ONLY, on all parts of the problem with no work shown, will receive a maximum of 1 point in content and a maximum of 1 point in Problem Solving.
- A student can receive the top score point in Problem Solving if the strategy used would result in a correct answer even though the response contains computation errors.
- A student can receive the top score point in Problem Solving if an error made in the "content" portion is used with an appropriate strategy to solve the problem.

Extended-Response Rubric

Content Rubric	
3	A score of three indicates a **thorough understanding** of the mathematical concepts embodied in the task. The response • shows algorithms, computations, and other content related work executed correctly and completely.
2	A score of two indicates a **partial understanding** of the mathematical concepts embodied in the task. The response • shows an attempt to execute algorithms, computations, and other content related work correctly and completely; computation errors or other minor errors in the content related work may be present.
1	A score of one indicates a **limited understanding** of the mathematical concepts embodied in the task. The response • contains major errors, or only a partial process. • contains algorithms, computations, and other content related work which may only be partially correct.
0	A score of zero indicates **no understanding** of the mathematical concepts embodied in the task.
Problem-Solving Rubric	
3	A score of three indicates a **thorough understanding** of the problem-solving concepts embodied in the task. The response • shows an appropriate strategy to solve the problem, and the strategy is executed correctly and completely. • identifies all important elements of the problem and shows a complete understanding of the relationships among them. • provides clear and complete explanations and/or interpretations when required.
2	A score of two indicates a **partial understanding** of the problem-solving concepts embodied in the task. The response contains one or more of the following errors. The response • shows an appropriate strategy to solve the problem. However, the execution of the strategy lacks an essential element. • identifies some of the important elements of the problem and shows a general understanding of the relationships among them. • provides incomplete or unclear explanations and/or interpretations when required.
1	A score of one indicates a **limited understanding** of the problem-solving concepts embodied in the task. The response contains one or more of the following errors. The response • shows an appropriate strategy to solve the problem. However, the execution of the strategy is applied incorrectly and/or is incomplete. • shows a limited understanding of the relationships among the elements of the problem. • provides incomplete, unclear, or omitted explanations and/or interpretations when required.
0	A score of zero indicates **no understanding** of the problem-solving concepts embodied in the task.

Clarification and Implementation Guidance

- Correct answers ONLY, on all parts of the problem with no work shown, will receive a maximum of 2 points in content and a maximum of 2 points in Problem Solving.
- A student can receive the top score point in Problem Solving if the strategy used would result in a correct answer even though the response contains computation errors.
- A student can receive the top score point in Problem Solving if an error made in the "content" portion is used with an appropriate strategy to solve the problem.

Constructed-Response
Standard 2: Computation
Standard 6: Problem Solving

Question 1

Natalie made 2 gift bags every night for 5 nights. Half of the bags were purple and the other half were yellow. It took her 5 minutes to make each bag.

How many minutes did it take Natalie to make all the gift bags?

Show All Work

Answer _____ minutes

What information is NOT needed to solve the problem?

Answer

_____

_____

Exemplary Response:

- 50 minutes
- Sample Process:

  (**) + (**) + (**) + (**) + (**) = 10 bags

  (5 min) + (5 min) + (5 min) + (5 min) + (5 min) + (5 min) + (5 min) + (5 min) + (5 min) + (5 min) equals 50 minutes total she works on the gift bags.

OR

Other valid process

AND

- The information in the problem that is not needed to solve the problem is that half of the bags are purple and half of the bags are yellow.

Constructed-Response
Standard 1: Number Sense
Standard 6: Problem Solving

Question 2

Jamie counts by 3s from 198, as shown in the pattern below.

198, 201, 204, 207, 210, 213

Which numbers in Jamie's pattern are even?

Answer _____

Jamie counts from 198 by 2s. On the lines below, explain what happens to the number of even and odd numbers in his new pattern. Explain why this happens.

_____

_____

_____

_____

Exemplary Response:

- 198, 204, 210

OR

- Every other number in the pattern is even beginning with 198.

AND

- If Jamie counted by 2s, then all of the numbers would be even and none would be odd. If you start with an even number and count by 2s, all numbers will be even.

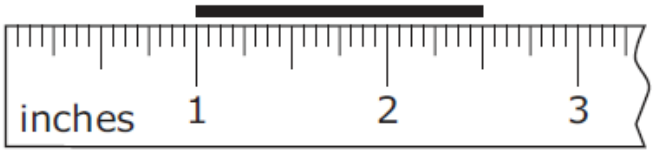
OR

- Other valid explanation

Constructed-Response
Standard 5: Measurement
Standard 6: Problem Solving

Question 3

Look at the ruler below. Zoey measures the black line to the nearest half inch and says the line measures $2\frac{1}{2}$ inches.



On the lines below, explain whether Zoey's measurement is correct OR is not correct.

Zoey adds a half inch to the black line. Then she draws a triangle with sides that are each the same length as the new line segment. What is the perimeter, in inches, of Zoey's triangle?

Show All Work

Answer _____ inches

Exemplary Response:

- Zoey's answer is incorrect because she is measuring from zero; however, the black line begins at 1 inch. She is adding an extra inch that is not part of the line. The correct measurement to the nearest half inch is 1 ½ inches.

OR

- Other valid explanation

AND

- 6 inches

- Sample Process:
    - ½ inch added to the line segment would make it 2 inches long.
    - 3 equal sides
    - 3 sides x 2 inches = 6 inches

Extended-Response
Standard 5: Measurement
Standard 6: Problem Solving

Question 4

The chart below shows the length of time four friends practiced soccer in a week.

Complete the chart with the total MINUTES each friend played soccer.

1 hour = 60 minutes

Soccer Practice

Name	Time	Time in Minutes
Shandra	3 hours	
Kailey	2 hours 40 minutes	
Carsen	2 hours 35 minutes	
Ramon	1 hour 15 minutes	

How many minutes did Shandra and Kailey practice IN ALL?

Show All Work

Answer _____ minutes

How much MORE time did Shandra and Kailey practice in all than Carsen and Ramon? Answer in hour(s) and minutes.

Show All Work

Answer _____ hour(s) _____ minutes

Exemplary Response:

Name	Time	Time in Minutes
Shandra	3 hours	180
Kailey	2 hours 40 minutes	160
Carsen	2 hours 35 minutes	155
Ramon	1 hour 15 minutes	75

AND

- 340 minutes
- Sample Process:
    - 180 + 160 = 340

  OR
    - Other valid process

AND

- 1 hour 50 minutes
- Sample Process:
    - 155 minutes + 75 minutes = 230 minutes
    - 340 minutes – 230 minutes = 110 minutes
    - 110 minutes – 60 minutes = 50 minutes
    - 1 hour 50 minutes

  OR
    - Other valid process